

REMARKS

Claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23, and 25 are currently pending in the application.

This amendment is in response to the final Office Action of December 12, 2007.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on Sakemi et al. (U.S. Patent 5,655,704)

Claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23, and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakemi et al. (U.S. Patent 5,655,704) in view of US provisional application No. 60/078,472 to Fjelstad. Applicants respectfully traverse this rejection, as hereinafter set forth.

To establish a *prima facie* case of obviousness the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Additionally, the Examiner must determine whether there is an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-1741, 167 L.Ed.2d 705, 75 USLW 4289, 82 U.S.P.Q.2d 1385 (2007). Further, rejections on obviousness grounds “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id* at 1741, quoting *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006). Finally, to establish a *prima facie* case of obviousness there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Furthermore, the reason that would have prompted the combination and the reasonable expectation of success must be found in the prior art, common knowledge, or the nature of the problem itself, and not based on the Applicant’s disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006); MPEP § 2144. Underlying the obvious determination is the fact that statutorily prohibited hindsight cannot be used. *KSR*, 127 S.Ct. at 1742; *DyStar*, 464 F.3d at 1367.

After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicants have amended the claimed invention to clearly distinguish over the cited prior art.

Applicants assert that the Sakemi et al. reference in view of Fjelstad reference cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding presently amended independent claims 1 and 18 because the Sakemi et al. reference in view of Fjelstad reference does not teach or suggest all the claim limitations of the claimed inventions.

Turning to the cited prior art, the Sakemi et al. reference teaches or suggests a solder ball mounting apparatus using a template 4 to position solder balls 3 from a hopper 12 onto pads 2a of a substrate 2. The substrate 2 only having a plurality of electrodes 2a above the surface of the substrate 2, not having any electrodes whatsoever recessed into the surface of the substrate 2. There is no teaching or suggestion in the Sakemi et al. reference to dispense solder paste from the hopper 12 into or through a template 4 onto the substrate 2. There is no description whatsoever in the Sakemi et al. reference for dispensing solder balls 3 onto electrodes 2a located in recesses or level surfaces of the substrate 2. The Sakemi et al. reference clearly describes solely the placement of solder balls 3 on the curved surfaces of the electrodes 2a which are neither level nor recessed.

The Fjelstad reference teaches or suggests a stencil having apertures therein having a diameter larger than the diameter of a solder ball to be passed therethrough but less than two times diameter of the solder ball to be passed therethrough. The Fjelstad reference contains no teaching or suggestion regarding the spacing of the stencil from the hopper.

Applicants assert that the combination of the Sakemi et al. reference in view of Fjelstad reference does not teach or suggest the claim limitations of presently amended independent claims 1 and 18 calling for "a hopper having side walls formed at an angle from an upper opening for feeding spheres into a smaller bottom opening having a dimension extending across said first pattern for dispensing said spheres into said plurality of through-holes extending across said stencil plate, the bottom opening having width in the range of at least two diameters of a conductive sphere to about ten diameters of a conductive sphere, said hopper having a bottom lower surface spaced from an upper surface of the stencil plate a distance in the range of about

less than one-half the diameter of a conductive sphere to about less than one-third the diameter of a conductive sphere” and “a hopper having a top opening narrowing to a bottom opening with a dimension extending across said pattern for dispensing said spheres into said plurality of through-holes of said pattern of said stencil plate, the bottom opening having width in the range of at least two diameters of a conductive sphere to about ten diameters of a conductive sphere, said hopper having a bottom lower surface spaced from an upper surface of the stencil plate a distance in the range of about less than one-half the diameter of a conductive sphere to about less than one-third the diameter of a conductive sphere”. Applicants assert that neither the combination of the Sakemi et al. reference nor the Fjelstad reference nor any combination of the Sakemi et al. reference in view of Fjelstad reference teaches or suggests such claim limitations.

Applicants submit that claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23, and 25 are clearly allowable over the cited prior art.

Applicants request entry of this amendment for the following reasons:

The amendment is timely filed.

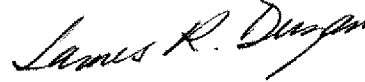
The amendment places the application in condition for allowance.

The amendment does not require any further search or consideration as the inventions described in the specification and claims have been searched.

Serial No. 09/576,727

Applicants request the entry of this amendment, the allowance of claims 1 through 3, 5, 6, 8, 18 through 20, 22, 23, and 25 and the case passed for issue.

Respectfully submitted,

A handwritten signature in black ink, reading "James R. Duzan". The signature is written in a cursive style with a large, stylized "J" and "D".

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